

ABSTRACT:

An optical signal processor comprises a first input terminal for a pulse signal light with a signal wavelength, a second input terminal for a probe light with a probe wavelength different from the signal wavelength, a first splitter to split the probe light into two portions, an XPM optical device, to which one portion of the split output lights from the first splitter and the pulse signal light enter, to modulate the one portion of the split output lights from the splitter according to amplitude variation of the pulse signal light, a second splitter to split the light with the probe wavelength phase-modulated by the XPM optical device into two portions, a first combiner to combine the other portion of the split output lights from the first splitter with the one portion of the split output lights from the second splitter in in-phase relation during a period corresponding to a non-pulse period of the pulse signal light, and a second combiner to combine the other portion of the split output lights from the second splitter with the output light from the first combiner in in-phase relation during a period corresponding to a pulse period of the pulse signal light.

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